



THYROID DISEASE IN PREGNANCY

BY
Dr.HAFSA



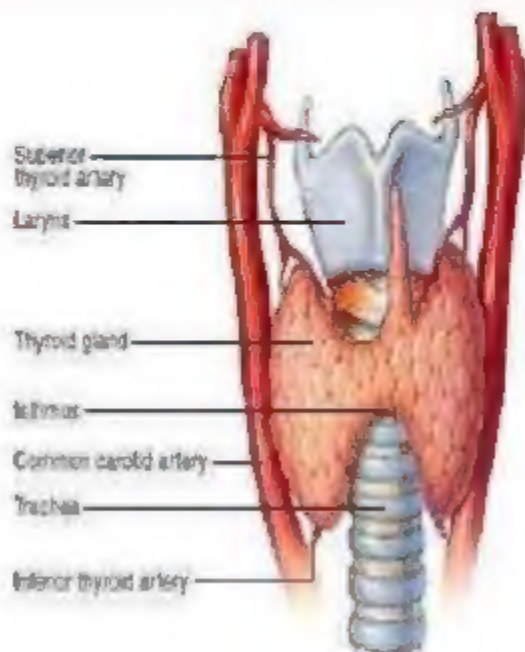
INCIDENCE

- Most common endocrine disorder in pregnancy.
- Effects 1-2% pregnant women.
- Hypothyroidism- 0.05%
- Hyperthyroidism- 0.05-0.2% (Grave's – 90%)
- Postpartum thyroiditis- 5-10%



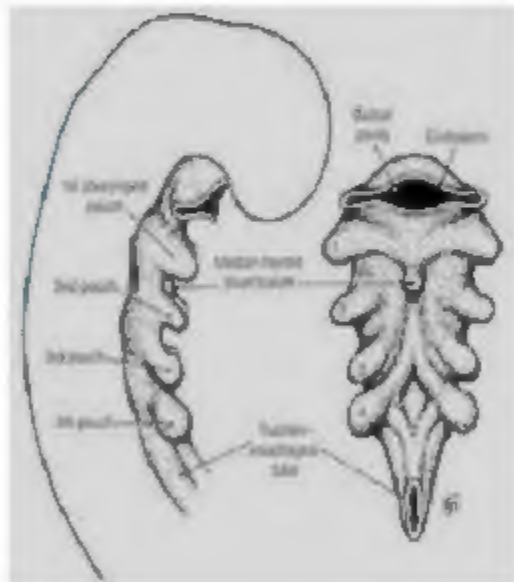
INTRODUCTION

- Thyroid; derived from Greek word – means **shield gland**.
- Highly vascular organ.
- Brownish red, 2 lobes (4x2cm), one isthmus(2x2cm).
- 30% have pyramidal lobe.
- Weight: 15-20g



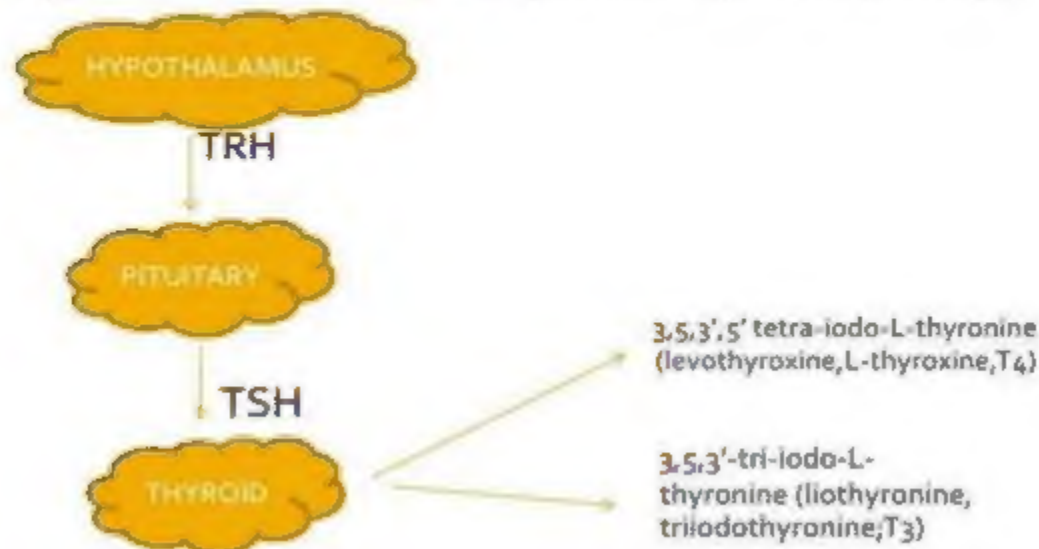
DEVELOPMENT

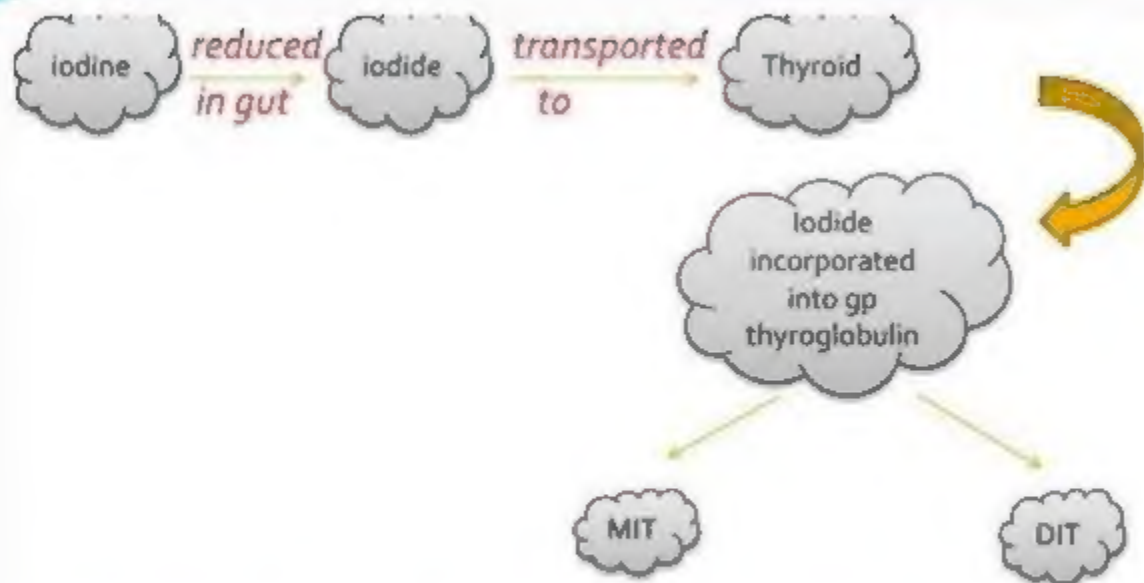
- ⑥ Fetal thyroid:
- ⑥ Form as a midline outpouching of the anterior pharyngeal floor, migrates and reaches its final position by 7 weeks.
- ⑥ Lateral contributions from the 4th and 5th pharyngeal pouches give its bilateral shape by week 8-9.



NORMAL CHANGES IN PREGNANCY

- Hypothalamic-Pituitary axis governs thyroid physiology.





- T_4 enters circulation by direct glandular secretion.
- T_3 is produced by mono-deiodination of T_4 in periphery.

CHANGES DURING PREGNANCY

- 20% increase in thyroid gland size due to hyperplasia and increased vascularity.
- Increase in Estrogen: increased TBG, decreased Free T4
- HCG rise: Structural similarity with TSH: increase in T4/T3, decrease in TSH
- Increased peripheral metabolism of thyroid hormones:
Placenta: type II /III deiodinases Fetus dependent on Type II for T4 T3
- Decline in availability of iodide related to increased renal clearance and overall losses to the fetus and placenta

PRE PREGNANCY & ANTENATAL

- Pre pregnancy management of thyroid disease
- During ante natal visit check TFTs if history suggestive



EXAMINATION OF THYROID

- **INTRODUCTION**
- **SHORT HISTORY**
- **INSPECTION**



Ask to degulgitate or take a sip of water
swelling size,site,shape,margins,surrounding
skin,visible pulsations,scar marks

HANDS tremors



- **PALPATION**

start with hands

check temperature, sweating, palmar
erythema, clubbing, pulse(rate
, rhythm, volume, character)



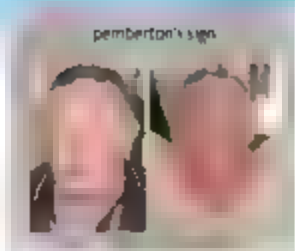
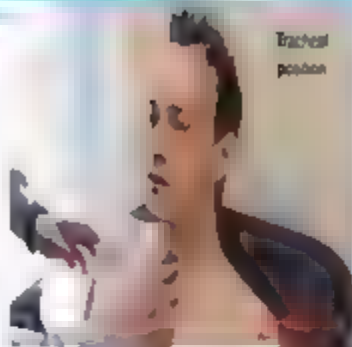
Now move to neck

EXAMINE from front & behind to confirm
inspection findings.

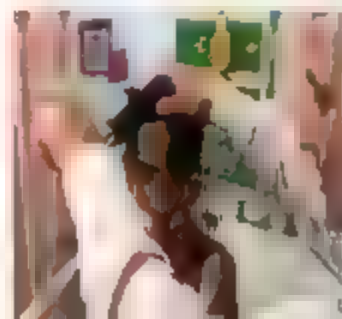


Positioning for a proper thyroid examination.

- LOCATE TRACHEA
- RETROSTERNAL GOITER



- **PERCUSSION & AUSCULTATION**
- LYMPH NODE EXAMINATION
- LOOKING FOR EYE SIGNS
- KNEE JERK



HYPERTHYROIDISM

- 0.2% of pregnant women
- 95% Grave's disease
- TFTS:-elevated free T4 T3 levels and depressed TSH



What Happens if Thyroid Level is High During Pregnancy?



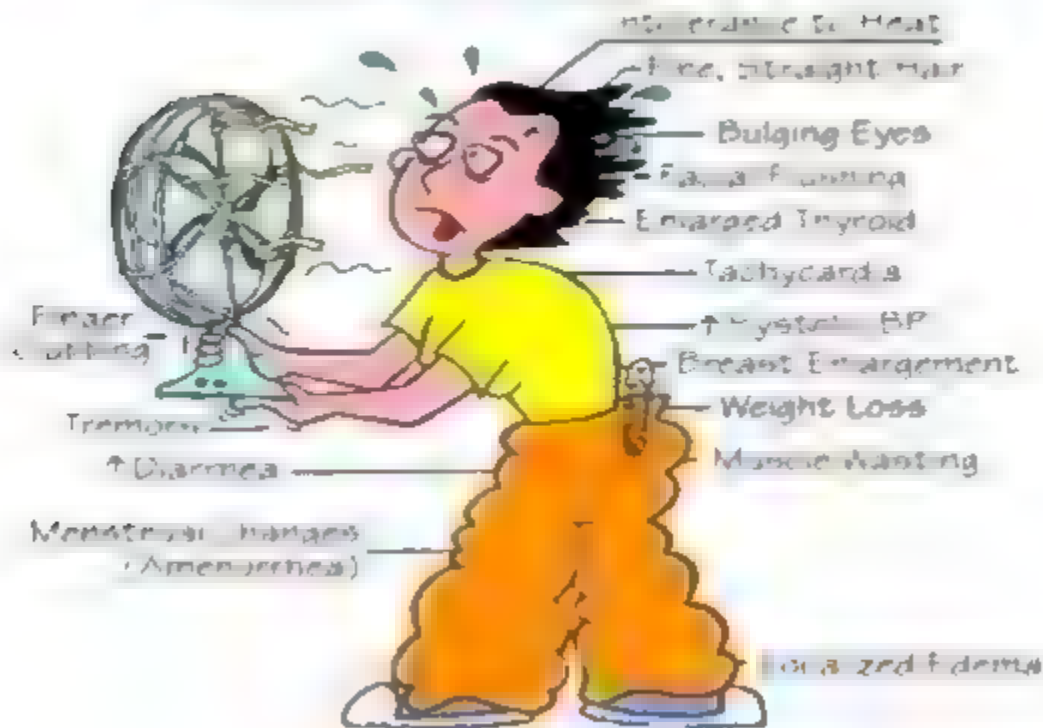
MATERNAL RISK

- Heart failure
- Thyroid storm
- Preeclampsia(11%)
- Anemia
- Infection
- Fever
- Psychosis, seizure, coma
- Diarrhea, pain, vomiting
- Atrial fibrillation
- Preterm
- Spontaneous loss

FETAL RISK

- Fetal tachycardia
- IUGR
- Fetal goiter
- IUFD
- Stillbirth
- Non immune hydrops
- Craniosynostosis
- Mental deficiency
- Poor wt gain, feeding, jaundice, hepatosplenomegaly

HYPERTHYROIDISM



MANAGEMENT

- It is essential to maintain euthyroidism in pregnancy
- Medical treatment involves PROPYLTHYROURACIL(PTU) & CARBIMAZOLE

Both cross placenta and are not teratogenic but make fetus hypothyroid,so minimal dose should be used.

- TFTs should be done every 4-6 weeks during pregnancy.
- B-blockers for tachycardia,tremors and palpitations.
- Surgical removal is rare.



- The dosage of carbimazole sufficient to control hyperthyroidism is **15-100 mg daily**, administered as divided doses 3 times daily.
- The appropriate dosage of PTU can range from **300 mg daily to a maximum dose of 1200 mg daily** in divided doses 3 times daily.
- Once serum thyroid hormone levels return to normal, it is necessary to **decrease the dosage to 5-20 mg daily of carbimazole or 50-300 mg daily for PTU in divided doses.**
- **When doses of PTU are > 300 mg/day or > 20 mg/day for carbimazole are taken long term, fetal goiter and hypothyroidism may result.**

HYPOTHYROIDISM



- 1% of pregnant women
 - Mostly due to Hashimotos thyroiditis or idiopathic
 - Direct pituitary causes are rare.
-
- ↑TSH & Normal FT4 & FT3
 - 2-5% in pregnancy
 - 31% positive for TPO Ab
 - Associated with Gest HTN, preterm deliveries, stillbirths, abruption.
 - Fetal psychomotor development may be impaired
 - Routine screening not recommended

HYPOTHYROIDISM



EFFECTS



○ ON PREGNANCY

- Prolonged infertility t/t
- Recurrent abortions
- Preeclampsia 5-10%
- Placental abruption 1%
- Preterm delivery 10-15%
- Anemia
- Myxedema coma
- Malpresentation
- LBW
- PPH
- Stillbirth

○ ON FETUS

- Neurodevelopmental delay
- Deafness
- Stunted growth
- Peripartum hypoxia
- Neonatal mortality

MANAGEMENT



- Levothyroxine sodium 1-2 mcg/kg/d (100 mcg/d).
- Measure TSH every 6-8 weeks.
- Newly diagnosed hypothyroid patient, a full replacement dose of levothyroxine should be instituted immediately.
- Thyroxine requirements of women with preexisting hypothyroidism increase during pregnancy and about 30-50% will need adjustment of their medication.



POSTNATAL MANAGEMENT

- Care of neonate
- Breast feeding
- Watch for signs/symptoms of maternal worsening

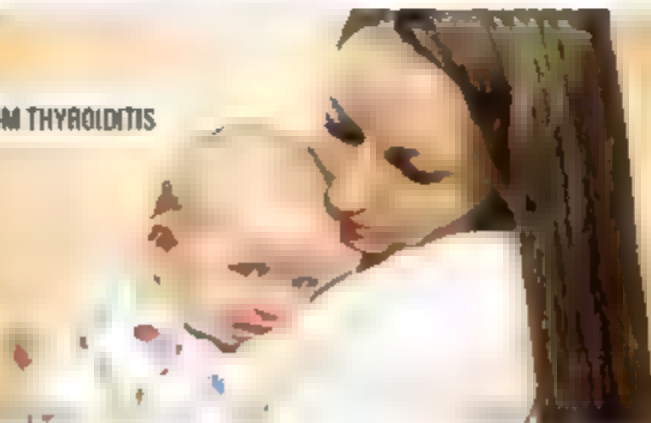


POST PARTUM THYROIDITIS

- Postpartum thyroiditis is an inflammation of the thyroid that occurs in women after the delivery of a baby.
- It occurs in approximately 5-10% of women.



POSTPARTUM THYROIDITIS



WHO IS AT RISK FOR DEVELOPING POSTPARTUM HYPOTHYROIDISM?

Any woman with:

- Autoimmune disorders.
- Positive anti-thyroid antibodies
- History of previous thyroid dysfunction
- History of previous postpartum thyroiditis (20% of women will have recurrence of thyroiditis with subsequent pregnancies)
- Family history of thyroid dysfunction

HOW IS POSTPARTUM THYROIDITIS TREATED?

- Treatment depends on the phase of thyroiditis and degree of symptoms .
- Women presenting with thyrotoxicosis may be treated with beta blockers to decrease palpitations and tremors.
- Antithyroid medications are not used for the thyrotoxic phase since the thyroid is not overactive.
- The hypothyroid phase is often treated with thyroid hormone replacement .If the hypothyroidism is mild, no therapy.
- If thyroid hormone therapy is begun, treatment should be continued for approximately 6-12 months and then tapered.

CASE 1

- A 28yr PG presents in antenatal clinic at 11 weeks of gestation with swelling in front of her neck with no signs/symptoms of thyroid disease.

Q. HOW WILL YOU MANAGE HER?

Q. WHAT ADVICE YOU WILL GIVE HER?

Q. HOW WILL YOU MANAGE HER?

- Detail history including family history
- Examination of swelling
- Investigations including TFTs
- Obstetric ultrasound
- If pt is euthyroid repeat TFTs 4-6wks after
- If hypo or hyper manage with drugs accordingly
- Strict antenatal visits

Q. WHAT ADVICE YOU WILL GIVE HER?

- Counseling and reassurance
- Proper antenatal visits
- Proper compliance

CASE 2

- A 22 yr old PG presents with hyperemesis gravidarum and on TFTs increase T4 levels with no signs and symptoms.

Q.WHAT WILL YOU DO?

Q.HOW WILL YOU MANAGE HER INCREASED T4 LEVELS?

- **Q.WHAT WILL YOU DO?**

Manage the current symptom of the patient and reassurance, do obstetrical ultrasound, CBC , SE.

Q.HOW WILL YOU MANAGE HER INCREASED T₄ LEVELS?

T₄ levels are elevated due to suppression of TSH because of increased HCG levels.

This usually resolves by 20 weeks of gestation.

Don't give anti thyroid drugs.



THANK YOU